

The Birds of the Maldive Islands, Indian Ocean

BY

W. W. A. PHILLIPS

(With two maps and three plates)

INTRODUCTION

Until a few years ago almost the only information available in connection with the ornithology of the Maldivian Archipelago was contained in the rather brief notes of Gadow & Gardiner (1903) where 24 species of birds were listed, some of them rather doubtfully, as occurring in the Maldives. Then, during the three months of December 1956 to February 1957, the author visited the capital, Malé, situated in North Malé Atoll and lying slightly to the north of the centre of the archipelago; as a result, an additional 39 species were added to the list of Maldivian birds (Phillips & Sims, 1958b). Furthermore, specimens of three endemic races, two of them new to science, were collected.

Subsequently, many of the atolls were visited by the Xarifa Expedition of the International Institute for Submarine Research, under the direction of Dr. Hans Haas. During this expedition, Drs. Georg Scheer and L. Franzisket devoted some of their time to collecting and observing the bird life of the atolls. Then, from May 1958 until April 1959, the author resided in Gan Island, Addu Atoll, in the extreme south. During his second stay in the Maldives, all the chief islands and reefs of Addu Atoll were visited frequently, and several brief excursions were made to Suadiva Atoll as well as a short return visit to Malé. And lastly, while this paper was being written and revised, additional notes were received from J. J. Latham (W/O., R.A.F.) who served in Addu Atoll in 1960 and 1961.

The results of the observations made on my last visit, together with those of Dr. Scheer and Mr. Latham, form the basis of this paper. Furthermore, in order to give as complete a picture as possible of the bird life of the atolls, breeding and migrations are briefly described

in addition to incorporating all available information into the Systematic List.

The 1956/57 visit increased the number of species, recorded from the Maldives, from 24 to 63; the present paper now advances the number of forms to 113 of which 73 are supported by collected specimens and the remaining 40 by sight records only. Forms peculiar to the Maldives are increased to 5 endemic races, including one of *Ardeola grayii* described by Dr. George Scheer (1960).

GEOGRAPHY AND ECOLOGY

The Maldivian Archipelago, consisting of upwards of 2500 small coral islands, islets, and exposed reefs, of which less than 250 are permanently inhabited, lies in the Indian Ocean over 400 miles to the west and south-west of Ceylon. It is located between 8° N. and 1° S. and between 72° to 74° E. In length, the archipelago stretches for over 470 miles, from the Eight Degrees Channel, south of the Laccadives and Minicoy (or Minikai) Island (at one period of its political history forming a part of the Maldives) to Addu Atoll, some 30 miles south of the Equator and 300 miles north of the Chagos Islands.

With the exception of a small number of isolated islets, the islands and their encircling reefs form 19 natural groups, clusters or 'atolls', of varying sizes and shapes, which in their turn form an incomplete, double chain, nowhere wider than 70 miles, running practically north and south. It would seem probable that the atolls have gradually been built up around and along the crests of a submerged, interrupted mountain range or ranges for, while within the central lagoons enclosed by the more or less circular peripheral reefs the depth of the water averages no more than 25 fathoms, it may reach 2000 fathoms in the seas close outside the islands.

In all the nineteen atolls the formation is very similar—an interrupted, peripheral reef, on the higher sections of which long, low, flat islands have been formed, encloses a wide shallow lagoon generally dotted with a varying number of small islets and coral sand-banks together with numerous flat-topped, tidal reefs. As a rule, tides of between three and four feet are normal throughout the archipelago, the reefs, dangerous in the extreme, being mostly exposed or awash during low water. Between the atolls, deep (frequently dangerous) channels of varying width and depth, in which ten-knot currents race when the monsoon winds are blowing, divide and isolate one atoll from the next.

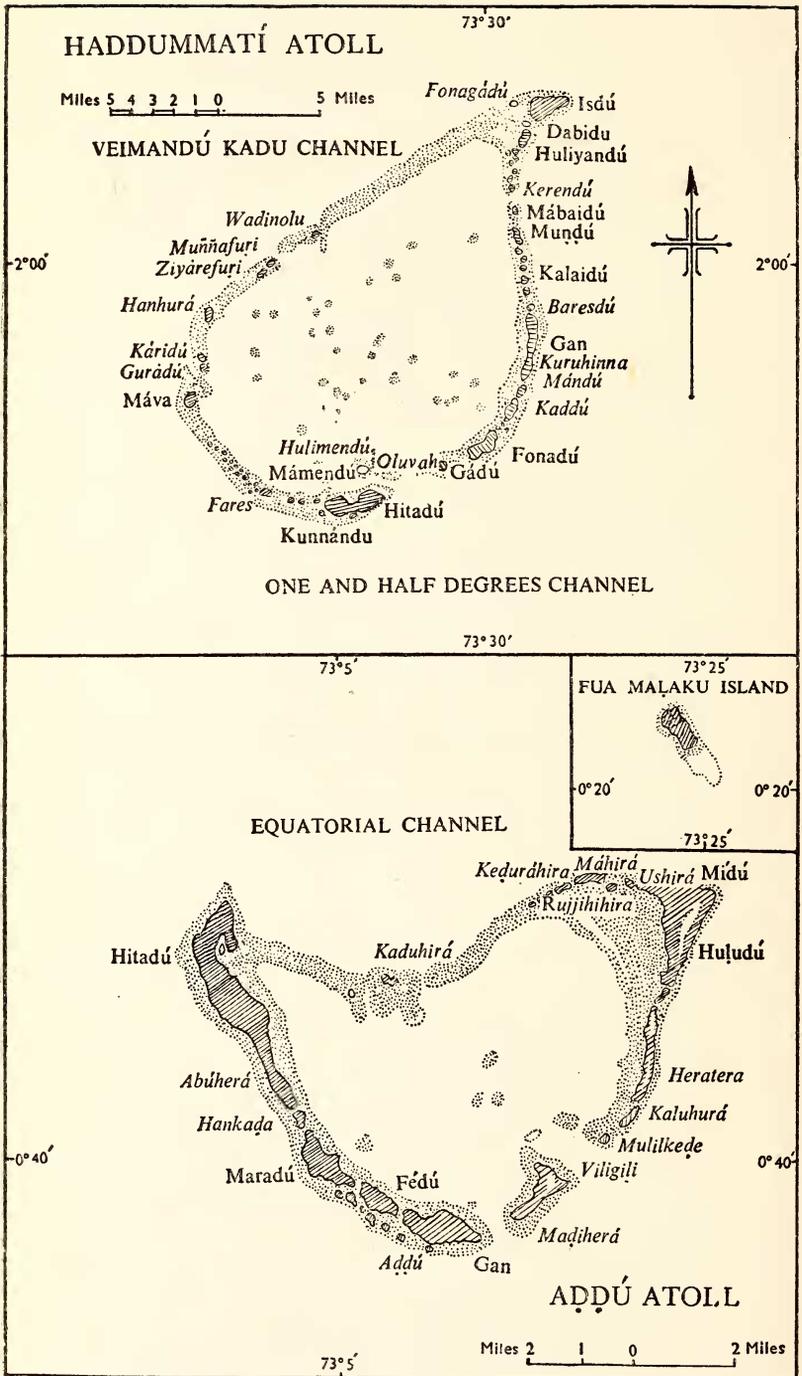
Climatic conditions are closely similar throughout the atolls but the northerly islands are more subject to the impacts of the North-east Monsoon from November to January, and of the South-west Monsoon from April to July, and are, in consequence, perceptibly cooler at times. In the southern atolls of Suadiva and Addu, which lie close to the Equator and within the doldrums, the impact of the monsoons is very slight and the climate is more humid.

Rainfall averages, annually, between 90 and 100 inches; it is often associated, especially in the southern atolls, with sudden, severe tropical storms. Generally, however, the fall is well distributed; long droughts are rare but deluges of several inches are not infrequent. Humidity is high, especially in the southern atolls, close to the Equator. Day temperatures vary between 80° and 95° in the shade, which in conjunction with the high humidity makes the climate very trying for the average European.

None of the islands rises more than five feet above mean sea-level and many of them have marshy interiors and freshwater ponds; the water-table is rarely more than four or five feet below ground-level. Originally, the islands were composed entirely of coral sand but, in course of time through the rotting of vegetable matter and the formation of humus, they have become well clothed with luxuriant vegetation, both high and low.

Geologically, the archipelago is of comparatively recent formation; so recent, in fact, that distinct forms of animal or plant life are only just beginning to emerge. The terrestrial mammalian and reptilian fauna is very limited and is confined to a few species (Phillips, 1958; Hill, 1958) common to the Indian peninsula and/or Ceylon, except for one fruit-bat, *Pteropus hypomelanus maris* Allen, which was described from Addu Atoll but which I was unable to trace in that Atoll. Of the other mammals, only the Common Flying-fox has diverged sufficiently to be accepted as a distinct endemic form, *Pteropus giganteus ariel* Allen. None of the reptiles is distinct but, amongst the birds, five local races are considered worthy of recognition.

It would appear that the archipelago has been colonized by animal and plant life almost entirely from the Indian mainland and Ceylon, either by 'island hopping' down through the Laccadives or by direct drift aided by the north-easterly monsoon winds as well as, in some cases such as the small rodents and shrews, by the unintentional assistance of man and his ships. But the fact that the Double Coconut or Coco de Mer, *Lodoicea seychellarum*, has occasionally been washed ashore on the western littoral, having drifted from the Seychelles over



1700 miles to the south-west, shows that there are possibilities of some colonization from the west or African zone.

As a direct result of the abundant and well-distributed rainfall, all the islands with the exception of those of very recent emergence have a luxuriant but specifically rather limited vegetation in those areas that have remained untouched by the hand of man. In the interiors of many of the larger islands, shallow brackish or freshwater pools and marshy areas occur, verged with extensive reed-beds, rank grass tracts, and matted pandanus brakes, the home of *Amaurornis phoenicurus* (the Swamp-Hen or Whitebreasted Waterhen), herons, and other marsh-loving birds, and the haunt of numerous migrant waterfowl and waders during the northern winter months. The natural vegetation clothing the remainder of the land, right down to the beaches, consists of large trees with dense, often matted, undergrowth through which it is difficult to force a passage. Most of the larger islands have however been cleared and planted with coconut palms, without which life for the Maldivians would be barely supportable. Villages and townships have been built on some of the islands, the surroundings of the houses being planted with many, large-leaved breadfruit trees, *Artocarpus incisus*, partly to give ever-welcome shade to the dwellings but chiefly to provide additional vegetable food. A few mango trees, *Mangifera indica*, areca-nut palms, *A. catechu*, drumstick trees, *Moringa* sp., tamarind, *Tamarindus indicus*, and edible pandanus are generally dotted about within the gardens or compounds, with several varieties of bananas, a few pomegranates, and large or small areas of yams as garden produce. In the open meeting places bo trees *Ficus religiosa* and banyans *F. bengalensis* are frequent. The Maldivian House Crow, *Corvus splendens maledivicus*, and an occasional Koel, *Eudynamys s. scolopacea*, are normally the only birds to be seen, except on the beaches when the tide is low.

Since under Muslim teaching only web-footed wild-birds may be used for food, Boobies, Frigate-birds, Shearwaters, Ducks, and Terns are taken as and when opportunities offer; frequently they are brought to the markets, alive but wing-clipped, for sale as food. Most of them are taken while they are nesting or roosting, for the Maldivians are adept at snaring. Other species are also taken and kept alive, with one wing clipped, as pets or playthings for the children who are without dolls or toys such as are enjoyed by those of more advanced lands. So, in the more densely populated atolls, the bird life often suffers considerably from the depredations of man, even if other enemies are few.

BREEDING SEASONS

On landing in the Maldive Islands, the ornithologist is immediately impressed by the total absence of small passerine birds. No singing or cheerful chirping greets him, either in the jungles or around the dwellings—only the occasional harsh 'caw' of the House-crow, the sole resident passerine in the whole of the archipelago, welcomes him.

Of the 113 species and subspecies of birds that are now accepted as occurring in the Maldives, under 20 species are known to be truly resident in the atolls. Several more, such as the Brown Booby, *Sula leucogaster*, Crab-plover, *Dromas ardeola*, Pratincole, *Glareola pratincola*, and some of the numerous terns are suspected of breeding in the more remote atolls but further research is required before their true status can be determined. Furthermore, observations on the breeding of the resident species are still too inadequate for definite conclusions to be formed regarding their breeding seasons but it would appear most probable that most species breed, with varying intensity, throughout the greater part of the year—as might be expected in a climate where there is so little variation in the seasons, length of daylight, temperature and rainfall.

A brief summary of our present knowledge of the breeding of each of the resident species is as follows:

Audubon's Shearwater, *Procellaria lherminieri bailloni*, lays its eggs in burrows dug in the coral sand on a number of secluded islands scattered along the eastern aspect of the archipelago, from Suadiva Atoll in the south (the bird does not breed in Addu) to Fádíffolu Atoll in the north. Gardiner recorded 'great numbers' breeding on Difuri and Olivelifuri islands, in Fádíffolu Atoll and the collecting of both eggs and chicks at the end of December. I recorded fresh eggs and chicks at the end of January (1957) and the local Maldivians, who use both the eggs and the birds as food, state that breeding continues throughout the year. This requires confirmation. Owing to the depredations of the fisherfolk, this shearwater appears to be rapidly decreasing in numbers in the Maldivian area.

The beautiful Long-tailed Tropic-bird, *Phaëthon l. lepturus*, a moderately plentiful species that frequents the lagoons and sparsely populated islands in all atolls, nests in cavities in old evergreen trees, such as *Hernandia ovigera* and *Cordia subcordata*. Gardiner records both eggs and young on 24 November and young, still unable to fly, were brought to Malé in January. In Suadiva Atoll, breeding was suspected in late March but not proved and in Addu in early July. In both cases, the local Maldivians stated that breeding was in

progress. During the heat of the day in hot, sunny weather, these birds very frequently seek shade and rest in large shady trees; often several will circle round and round, calling continually for half an hour or more before making a successful landing, their feet not being developed for perching in trees.

The Lesser Frigate Bird, *Fregata ariel iredalei*, was discovered by Gardiner nesting in the tops of tall trees, *Calophyllum inophyllum* and *Terminalia catappa*, in Mahlosmadulu Atoll during October and November. Although I received rumours of breeding in other atolls, this appears to be the only authentic record available. The Eastern race of the Common Heron, *Ardea cinerea rectirostris*, a common bird throughout the archipelago, nests in the tops of coconut palms, in wild pandanus trees in swampy areas, and in small trees and large bushes overhanging lagoon shores. Gardiner records young during July and August; in Malé, two semi-fledged young were brought to me in early December and nests and young were seen in January. In Addu Atoll, I saw occupied nests early in June and the same nests were reoccupied early in December while young were in the nests during January and February. Indications are, therefore, that this heron breeds at least twice during the year, generally from June to August and from December to February. Possibly breeding may be intermittent throughout the year.

The Little Heron, *Butorides striatus*, commonly nests in bushy trees growing close to lagoons or in swamps, as well as in the tops of pandanus trees. I have observed nesting in North Malé Atoll (*B. s. didii*) during December and January and in Addu Atoll (*B. s. albidulus*) I found eggs and small young in mid-October and again towards the end of January but birds in full breeding plumage, with reddish pink legs, were noted in almost every month. It would seem probable, therefore, that although the majority breed during the period October to February, some breed at other times of the year.

The Maldivian Pond-heron, *Ardeola grayii phillipsi*, is even more plentiful in Addu Atoll than the Little Heron, *B. s. albidulus*, but nests are difficult to find. Individuals in full breeding plumage, with reddish pink legs, have been noted throughout the year; a large chick, taken from a nest, was examined on the 18 October; a pair was observed building a nest in the top of a wild pandanus on the 24 January when almost all of these birds appeared to be in breeding dress and on the 14 February a female containing 3 oviduct eggs, almost due to be laid, was collected. It seems from this evidence that this bird also breeds chiefly during the period September or October

to March or April as well as, less intensively, at other times of the year.

The Swamp-Hen or Whitebreasted Waterhen, *Amaurornis phoenicurus*, although plentiful in all the atolls is so elusive and its nests are so well concealed that it is difficult to study its breeding. Nests are concealed amongst rank vegetation and in low bushes. Gardiner recorded a young bird (*maldivus*) taken from a nest in July; in Addu Atoll birds (*phoenicurus*) were very noisy and apparently commencing to breed in June and a $\frac{3}{4}$ grown juvenile was seen on the 21 July and three well-grown chicks on the 25 August. Again, in October a $\frac{1}{2}$ grown chick was observed on the 10th and a hatching on the 18th. From these observations it would seem that this bird breeds from about June to November or, possibly, throughout the year.

Although at least 10 species of terns are stated by the Maldivians to breed in the archipelago, we have authentic records of the breeding of only four. The Blacknaped Tern, *Sterna sumatrana mathewsi*, was said by the local Maldivians to nest in North Malé Atoll in April and May but it was not until early June that I located several breeding colonies on sandy islets in Addu Atoll. Breeding appears to be confined to the months of May, June, and July.

The Common Noddy, *Anoüs stolidus pileatus*, is exceedingly numerous, at times, in many of the atolls but although its presence within the lagoons (as well as in the seas outside) is well known to the Maldivians, they know nothing of its breeding. However, on the 28 April, I discovered a single nest, containing a newly hatched chick, on a large metal marker-buoy anchored in Addu Atoll lagoon. This appears to be the sole definite record of the breeding of this noddy in the Maldives. Gardiner states that Forster Cooper took an adult female and a nestling of the Lesser Noddy, *A. tenuirostris*, from a nest in a pandanus (Screw-pine) on Mabarau Island, South Mahlosmadulu Atoll, on 26 November 1899; he states further the Lesser Noddy is 'nowhere common, but found throughout the whole of the Maldives' but he fails to mention the presence of the Common Noddy. A search in both North Malé and in Addu Atoll failed to yield a single Lesser Noddy but showed that the Common Noddy is plentiful. It seems possible, if not probable, therefore, that this nesting record should, in fact, refer to the Common Noddy. In any case, it is interesting that one of the records should refer to a Noddy nesting in November and the other to one nesting in April, indicating that either the two species (if two species do, in fact, occur in the Maldives) breed at different times during the year or, alternatively,

that the Common Noddy (if both the records refer to that species) breeds either in the spring or in the autumn or during both these periods.

The charming White Tern, *Gygis alba monte*, breeds very freely in Addu Atoll, to which atoll it is confined. Probably owing to the presence of large numbers of House-crows, *Corvus splendens maledivicus*, it has not been able to establish itself in other atolls. Presumably, also, it is of comparatively recent arrival in Addu Atoll as it is not mentioned by Gardiner; he could hardly have overlooked it, had it been present at the time of his visit. In Addu Atoll, it is always present in the trees around the villages, flying overhead or sweeping over the central lagoon and near-by seas. In habits, it is essentially a 'tree-tern'. Moreover, though it is often active throughout the greater part of the day, it prefers the early mornings and late evenings for its foraging and is often on the move on moonlight nights. Generally, when incubating its single egg on a horizontal branch, high stump, or other lodgement in a tree or palm, it is most confiding in its behaviour towards man but it will collect in large numbers to mob to exhaustion or precipitous flight any crow, buzzard, or other potentially dangerous bird that appears in the vicinity. It is probable that pairs mate for considerable periods. Frequently a pair indulges in dual display flights over the lagoon and the land. Although only a single egg is laid at each laying, observations point to each pair raising, or attempting to raise, several young during each year. Breeding continues throughout the year but my notes show that the peak periods are during January and early February and again towards the end of May and in June.

The single resident Cuckoo, the Koel, *Eudynamis s. scolopacea*, is dependent upon the Maldivian House-crow, *Corvus splendens maledivicus* as host, so its breeding must coincide with that of the crow. An oviduct egg was taken in Malé on 11 December and a juvenile, scarcely able to flutter, was captured on another island in North Malé Atoll on 23 January when the crows were nesting. The koels of Addu Atoll are most puzzling as, although both sexes are present and courtship flights were observed, there are no crows or other suitable foster-parents present in the atoll; presumably, therefore, the koels of Addu Atoll are either of non-breeding stock or they return over 30 miles of ocean to Suadiva Atoll in order to breed.

Although Gadow & Gardiner state that the Maldivian House-crow breeds between May and September, I saw no signs of breeding in the southern atolls either at the end of May, when all crows appeared to be in moult, or in July. On the other hand, I saw nest-building in

North Malé Atoll early in December and again in January when all crows were in full plumage. It would seem probable, therefore, in spite of Gadow & Gardiner's statement, that the breeding period extends from about November to March or April if it does not continue, intermittently, throughout the greater part of the year.

TABLE SHOWING OBSERVED AND PRESUMED BREEDING OF MALDIVIAN RESIDENT BIRDS

(Unconfirmed breeding is denoted by 'P' and confirmed by 'B')

	June	July	August	September	October	November	December	January	February	March	April	May
<i>Procellaria</i> <i>therminieri bailloni</i>	P	P	P	P	P	P	B B B B	P	P	P	P	P
<i>Phaethon</i> <i>lepturus lepturus</i>		P				B	B B B B	P	P			
<i>Fregata</i> <i>ariel iredalei</i>					B B B B							
<i>Ardea</i> <i>cinerea rectirostris</i>	B B B B	B B B B					B B B B B					
<i>Butorides</i> <i>striatus didii</i> <i>striatus albidulus</i>							B B B B	P P P B	B B B B			
<i>Ardeola</i> <i>grayii phillipsi</i>				P	B B P	P P P	P B B B B					
<i>Amaurornis</i> <i>phoenicurus</i>	P B B B B	B P P B B				P						
<i>Sterna</i> <i>sumatrana mathewsi</i>	B B B B										P P B	
<i>Anoïis</i> <i>stolidus pileatus</i> <i>tenuirostris ?</i>					P B B P						B B B	
<i>Gygis</i> <i>alba monte</i>	B B B B	B B B B	B B B B	B B B B	B B B B	B B B B	B B B B	B B B B	B B B B	B B B B	B B B B	B B B B
<i>Eudynamys</i> <i>scolopacea scolopacea</i>						B B B B						
<i>Corvus</i> <i>splendens maledivicus</i>	?	?	?	?		P	B B B B	B B B B				?

MIGRATION

Some slight knowledge of the migratory movements in the Maldives was gained during my first visit to Malé, in North Malé Atoll, from the end of November 1956 to the beginning of February 1957. This knowledge was added to, considerably, during my subsequent residence in Addu Atoll during 1958 and early 1959 and has been further extended by the notes collected by Mr. J. J. Latham during his service on Gan (Addu) in 1961 and 1962.

The observations made in Addu Atoll confirm that considerable numbers of non-breeding visitors, of eastern European and western Asian origin, arrive from the north during October to December (a few may come in August and September) and return northwards during the following March to May; it has also been established that unexpectedly large numbers of non-breeding waders loiter in the southern Maldives throughout the northern summer months. Furthermore, evidence has been collected that tends to show that some migrants travel beyond Addu Atoll to the Chagos Archipelago, over 300 miles to the south, and return later.

Since it was stressed in 1958 (Phillips & Sims) that so very little information had been recorded from the Chagos Islands, Loustau-Lalanne has published his paper (1962) on the birds of that archipelago. In this paper, he lists, as 'migrants recorded November/December 1960', the following: *Anas* sp. seen in flocks on Diego Garcia; *Charadrius squatarola*, several of which were seen in December; *Numenius phaeopus*, often seen feeding under the coconuts in December; *Numenius arquata*, one shot on the beach in December; *Arenaria interpres*, seen in flocks on the beach on several islands; *Crocethia alba*, two of which were seen on the outer beach of Diego Garcia; *Dromas ardeola*, which is probably an itinerant resident in both the Chagos and the Maldivian archipelagos and several hirundines which, he states, were probably *Delichon urbica*. He states, further, that reports received locally show that the hirundines arrive in the Chagos Islands in November and leave again in March.

It is significant that all the migrant species mentioned were recorded in Gan (Addu) between October and March or April, in 1958/59 and again in 1961/62, indicating that they are regular annual winter visitors. On several occasions it seemed most probable that the birds seen had arrived in Gan (Addu) from the southward, instead of from the north; there are therefore strong indications, supported by Loustau-Lalanne's paper, that small numbers of migrants pass through the Maldives into the Chagos Archipelago where they spend the whole

or part of the winter before returning by the same route. Only ringing or 'banding' can confirm or disprove this theory.

The following notes briefly outline the movements of some of the more notable species that visit the Maldivian atolls but do not qualify as residents.

PROCELLARIDAE. The three regular visiting species of this family: Wilson's Petrel, *Oceanites oceanicus*, the Wedgetailed Shearwater, *Procellaria pacifica*, and the Pinkfooted Shearwater, *P. carneipes*, all appear to conform to the accepted movement pattern of southern-hemisphere-breeding species that visit the northern waters of the Indian Ocean during the southern winter. All three species are reported to arrive in the waters off the Maldives towards the end of March and in April and to leave during the following October and early November. The single Bulwer's Petrel, *Bulweria bulwerii*, taken in Addu Atoll on the 22 August, was the first of its species to be reported in the Indian Ocean.

ARDEIDAE. A Purple Heron, *Ardea purpurea*, appeared in Addu Atoll on 13 October (1958) but, being a juvenile, the race to which it is referable cannot be determined; another was observed, in Gan (Addu), by J. J. Latham on 14 July (1961). These may have come from the north, moving from atoll to atoll down the length of the Laccadives and the Maldives, but it is possible that they might have crossed over from the Chagos Islands. The early dates of arrival would seem to point to the latter. The Eastern Large Egret, *Egretta alba modesta*, did not arrive in Addu Atoll until 20 December, indicating that it had gradually worked its way southwards through the atolls; it is well known to the Maldivians as an annual visitor.

A party of Black Bitterns, *Dupetor f. flavicollis*, was observed flying south-west across Gan Island, Addu Atoll, on 4 June; no other was seen in this atoll, so this party may have gone farther south. Farther north, it is an annual visitor, in small numbers, during the northern winter. Both the Chestnut Bittern, *Ixobrychus cinnamomeus*, and the Little Yellow Bittern, *I. sinensis*, appear to be vagrants.

ANATIDAE. Wild ducks commenced to arrive in Addu Atoll with a flight of Garganey, *Anas querquedula*, on 3 October. Flights of up to 25 were frequent until the middle of January. In early November, small parties of Shovellers, *Spatula clypeata*, and a few Pintail, *Anas acuta*, were seen. These three species seem to be regular visitors from the north but the White-eyed Pochard or

Ferruginous Duck, *Aythya nyroca*, and the Cotton Teal, *Nettapus c. coromandelianus*, that appeared in Gan, Addu Atoll, early in December were probably vagrants. The Garganey is well known to the Maldivians of Addu Atoll but I heard nothing of it farther north; it is likely that the flocks of '*Anas* sp.', recorded in the Chagos Islands, were of this species.

FALCONIDAE. All members of this group are either migrants or vagrants; none is resident. The Honey-buzzard, *Pernis apivorus orientalis*, arrived in Addu Atoll on 4 December, the Buzzard, *Buteo* sp., on 14 January, and the Osprey, *Pandion haliaetus*, in July; all were probably stragglers from the north, working their way southward. The Harriers, which are regular visitors to the whole of the Maldives during the northern winter months, commenced to arrive in Addu Atoll about the middle of November; they remained, feeding chiefly upon *Calotes* lizards, *C. versicolor*, and large grasshoppers, until the middle of the following March. These Harriers, *Circus macrourus* and *C. pygargus*, are well known to the Maldivians who dislike them as they take an occasional chicken. The Common Kestrel, *Falco t. tinnunculus*, is also a regular migrant to the northern atolls but it is uncommon in Addu Atoll where its place is taken by the Lesser Kestrel, *F. n. naumanni*, and the Eastern Redlegged Falcon, *F. vespertinus amurensis*. The former arrived in a small party on 12 November and the latter on 5 December. Neither of these two species has been recorded from any other atoll—like the Harriers, they probably came from the north. A single Peregrine, *F. peregrinus*, arrived in Addu Atoll in the middle of October (14th); it appeared to depart in a southerly direction and, as it was not seen in Addu again, may have passed on to the Chagos Islands.

CHARADRIIDAE. With the exception of the Caspian Plovers, *Charadrius asiaticus*, which were probably stragglers to Addu Atoll, all the representatives of this family appear to be regular annual visitors, in small or large numbers, during the northern winter period. The Lesser Sand Plovers, *C. mongolus atrifrons*, were the first to arrive in Addu Atoll; they were closely followed by the Grey Plover, *C. squatarolus*, both species commencing to fly in during the latter half of August. The Large Sand Plover, *C. leschenaultii*, came in September and the Asiatic Golden Plover, *C. dominicus fulvus*, in flocks, in early October. But it was not until the second week in November that large influxes of plovers took place. Then, in addition to the foregoing, the Ringed Plover, *C. hiaticula tundrae*, arrived on the 17th, Jerdon's Little Ringed Plover, *C. dubius jerdoni*, on the 10th

(with the two Caspian Plovers) and the Kentish Plovers, *C. alexandrinus*, on the 18th. From the middle of November to April there were always considerable numbers of plovers, of various species, to be seen in Addu Atoll where they spent the winter. A small flock of non-breeding Grey Plovers and at least two Large Sand Plovers remained the whole year on and around Gan Island.

The Turnstone, *Arenaria i. interpres*, the most abundant of all the waders that visit the Maldives, appeared in Addu Atoll at the end of May when a flock of 25 arrived; probably they were non-breeding loiterers but towards the end of June another flock of c. 65 appeared. Did they come from the north or did they come in from the Chagos Islands, to the south? That considerable numbers of non-breeding birds loiter in the Maldives throughout the northern summer period is certain but it is curious that large flocks should arrive in Addu Atoll in May and June.

SCOLOPACIDAE. Three species of snipe visit Addu Atoll although only one species, the Pintail Snipe, *Capella stenura*, was seen in North Malé Atoll. Swinhoe's Snipe, *C. megala*, of which a single specimen was collected on 8 November, is almost certainly a rare straggler but the Pintail Snipe and the Fantail or Common Snipe, *C. g. gallinago*, are both regular annual visitors to Addu. *C. stenura* arrived on 4 October, after which date there were always small numbers in the marshy areas until the following spring. *C. gallinago*, however, did not arrive until 15 December, after which date a few wisps were generally present. Although *C. gallinago* did not arrive until so long after the arrival of *C. stenura*, it was the former species only that Gardiner found so plentiful in Addu Atoll, in April 1900, that he thought the species must breed there.

While the Eastern Curlew, *Numenius arquata orientalis*, which did not arrive in Addu Atoll until 6 November, is a scarce visitor, the Whimbrel, *N. p. phaeopus*, is one of the most abundant of all the birds that visit the Maldives. Not only do large numbers spend the northern winter in the archipelago but many non-breeding birds remain in Addu throughout the summer as well. Some of these loiterers appear to pair and behave as though they were about to breed but none actually did. The numbers in the atoll have been observed to fluctuate from time to time so some may pass to the Chagos Islands and return or, alternatively, they may fly northwards and return. Birds intending to breed have generally left Addu by late March or early April.

A single, non-breeding Bartailed Godwit, *Limosa lapponica*, also

spent a year in Addu Atoll; presumably, it was a straggler from the north.

In 1958, the Wood Sandpiper, *Tringa glareola*, and the Common Sandpiper, *T. hypoleucos*, arrived in Addu Atoll on 12 and 10 August, respectively. These arrival dates coincide with the early arrival dates of these two species in the south of Ceylon (Phillips, 1957) and are probably normal. Both are regular visitors but whereas *T. hypoleucos* comes in considerable numbers *T. glareola* is distinctly scarce. The Eastern Redshank, *T. totanus eurhinus*, and the Greenshank, *T. nebularia*, both regular visitors, did not appear until November, the Greenshank arriving in small parties early in the month and the Redshank later. Terek Sandpiper, *Xenus cinerea*, came in about the same time (21 November); this curious little wader may be an annual visitor, in small numbers, as it is in Ceylon.

The majority of waders of the genus *Calidris* also commenced to arrive about the middle of November; the Little Stint, *C. minuta*, a regular visitor in small numbers, arrived on 11 November, the Longtoed Stint, *C. subminuta*, on the 17th and the Dunlin, *C. a. alpina*, on 25th. The occurrence of small parties of *C. subminuta* in Addu Atoll was as interesting as unexpected; hitherto the species had not been recorded from so far westwards. They remained until late February. The arrival of *C. a. alpina* was also unexpected as, although the species occurs in northern India, it has not yet been recorded from Ceylon. A single Temminck's Stint, *C. temminckii*, was seen in Addu on 5 October; another, possibly a non-breeding loiterer, was there on 26 May.

The Curlew Sandpiper, *C. testacea*, is puzzling. On 23 May a party of 8 appeared on Gan, Addu Atoll, and next day there were two parties of 5 and 7 respectively; all but one were in non-breeding plumage. On 25 June, a flock of between 45 and 50 appeared while on 16 October a large company, estimated at over 100, passed over flying westwards. Obviously, many non-breeding birds loiter in the southern Maldives during the northern summer months but from where did the parties suddenly appear in May and June? It seems reasonable to suspect that some of them may have come up from the Chagos Islands.

A single Sanderling, *Crocethia alba*, appeared on the southern beach of Gan, Addu Atoll, on 15 November and a juvenile Ruff, *Philomachus pugnax*, on 5 October; both unusual visitors from the north.

LARIDAE. At present there is insufficient information available to permit of the classification, as residents or visitors, of many of the

Maldivian terns. It is evident, however, that the single Whitewinged Black Tern, *Chlidonias leucoptera*, collected in Addu Atoll on 8 November, was a northern visitor and so were the two Tibetan Terns, *Sterna hirundo tibetana*, taken on 11 January and 22 February, respectively. A single Mesopotamian Ternlet, *Sterna albifrons praetermissa*, caught on 15 November, was also a northern visitor but the race *S. a. saundersi*, which is so plentiful in the Maldives, and several of the other species of terns are presumably residents. It is curious that the Brownheaded Gull, *Larus brunnicephalus*, which is so plentiful in India and Ceylon during the northern winter, does not visit the Maldives.

CUCULIDAE. Cuckoos are notorious wanderers so it is interesting to record that in 1959 two species arrived in Addu Atoll within a week of one another; the Common Cuckoo, *Cuculus canorus*, on 4 January and the Plaintive Cuckoo, *Cacomantis merulinus passerinus*, on 13 January. Another Common Cuckoo was seen during the first week of January 1961. Both these species are known as habitual wanderers.

APODIDAE. The occurrence of three species of swifts is of more than passing interest. An Edible-nest Swiftlet, *Collocalia brevirostris*, was seen in Malé, North Malé Atoll, on 19 December 1956 and another in 1957, while still others were observed in Gan in 1961/62 yet there are no normal roosting places available in the Maldives; so, contrary to their usual habits, these swifts must have roosted either in trees or in low buildings. It seems odd that they should have wandered into the Maldives. A common Swift, *Apus apus*, was observed flying southward over Gan, Addu Atoll, on the morning of 1 November; it disappeared in the general direction of the Chagos Archipelago. It appeared to be on passage and was not feeding, as it passed over.

MEROPIDAE. On 10 January, a party of one adult and two first-year Common Bee-eaters, *Merops apiaster*, appeared on Gan, Addu Atoll; they remained until 31 March, living chiefly on large dragonflies. Their presence in Addu Atoll was most unexpected; presumably they came from the north.

HIRUNDINIDAE. The Eastern Swallow, *Hirundo rustica gutturalis*, is well known as a winter visitor to the Maldives; a party of 3 appeared in Addu Atoll on the evening of 14 October and another party of about 20, accompanied by several Sand Martins, *Riparia riparia*, on the evening of 3 November (1958). This second party remained in

the atoll for some weeks and then disappeared. Did it (and the October birds) return northwards or did it pass on southwards to the Chagos Islands?

TURDIDAE. The most interesting of all the migrants and wanderers that appeared in Addu Atoll were the Wheatears. On the afternoon of 16 November (1958), a single Pied Wheatear, *Oenanthe leucomela leucomela*, was observed on the southern beach of Gan Island (Addu Atoll), almost the extreme southerly point of the Maldives; on the 23rd afternoon, although there were no Wheatears present in the morning, a party of one Pied Wheatear and two Isabelline *O. isabellina isabellina* was on the southern beach at 16 hours; they were just above the tide line and gave one the impression that they had just arrived from overseas. Later, on 14 December, another Pied Wheatear appeared close to where the others had been seen. All these birds gave one the impression that they had just arrived from the south but they could have come from other islands in Addu Atoll or from Suadiva Atoll to the north. As far as can be ascertained, they are the only wheatears ever to have been observed in the Maldivian Islands.

MOTACILLIDAE. It has already been recorded (Phillips & Sims, 1958) that a Yellow Wagtail, *Motacilla flava*, was observed on a ship passing between Addu Atoll and the Chagos Islands on the 10 April 1957, so it was hoped that more of these wagtails would be observed passing through Addu Atoll in 1958/59. In fact, only a single Grey Wagtail, *M. cinerea*, was observed on 17 December and no Yellow Wagtails appeared that year but, in 1961, small numbers were observed in Gan (Addu) by J. J. Latham between 28 October and 18 November. All these birds disappeared almost at once, so it seems likely that they may have passed on farther south. Another Redthroated Pipit, *Anthus cervinus*, was collected in Gan (Addu) on the 8 December and several pipits were observed by J. J. Latham in 1961 on 22 September, 12 October, and 7 and 18 December, indicating that small numbers, of Pipits not only visit the Maldives annually, but that some of them pass southwards at any rate as far south as the extreme southernmost tip of the archipelago. Whether any of them (and the wagtails) pass on farther south to the Chagos Islands must await further investigation in the Chagos Islands. There is every indication that some do so.

TABLE SHOWING THE APPROXIMATE DATES OF CASUAL VISITORS TO
ADDU AND NORTH MALÉ ATOLLS

'A' denotes Addu Atoll ; 'M' denotes North Malé Atoll ;
'S' denotes 'at Sea, close to the Maldives'

	June	July	August	September	October	November	December	January	February	March	April	May
<i>Bulweria bulwerii</i>			A									
<i>Ardea purpurea</i>		A			A	A	A	A				
<i>Ixobrychus sinensis cinnamomeus</i>			A		A	A	A M			A		
<i>Botaurus stellaris</i>							A					
<i>Plegadis falcinellus</i>					A			A				
<i>Aythya nyroca</i>							A					
<i>Nettapus c. coromandelianus</i>							A					
<i>Pernis apivorus orientalis</i>							A					
<i>Pandion haliaetus</i>		A										
<i>Falco peregrinus amurensis n. naumanni</i>					A A	A A	A A					
<i>Charadrius asiaticus</i>						A						
<i>Capella megala</i>							A					
<i>Xenus cinerea</i>						A	A					
<i>Philomachus pugnax</i>					A	A						
<i>Himantopus himantopus</i>						A						
<i>Chlidonias leucoptera</i>						A	A					

	June	July	August	September	October	November	December	January	February	March	April	May
<i>Sterna albifrons praetermissa</i>						A						
<i>Cuculus canorus</i>								A A				
<i>Cacomantis merulinus passerinus</i>						A		A				
<i>Collocalia brevirostris</i>						A	M	A				
<i>Apus affinis apus</i>						A	A					
<i>Merops apiaster</i>								A A A A	A A			
<i>Oenanthe isabellina leucomela leucomela</i>						A A	A					
<i>Tchitreia paradisi</i>					A							
<i>Motacilla cinerea flava</i>						A A	A A					S
<i>Anthus t. trivialis cervinus</i>				A	A		M A A M					
<i>Riparia riparia</i>						A						
<i>Lanius cristatus</i>						A						
<i>Sturnus vulgaris</i>							S					

ANNOTATED SYSTEMATIC LIST OF THE BIRDS OF THE MALDIVES

(including all records from and from the vicinity of the Archipelago)

The following abbreviations are used in this list: M.=Maldivian; (P. & S.)=Phillips & Sims; (P.)=Phillips; (G. & G.)=Gadow & Gardiner; (G. S. & L. F.)=Georg Scheer & L. Franzisket; (J. J. L.)=J. J. Latham.

PROCELLARIIDAE

Oceanites oceanicus (Kuhl) : Wilson's Petrel. (M. = *Kurangee*)

Sight record only. One identified at sea (28 November 1956) less than 100 miles to the east of Malé Atoll. Well known to the Maldivians who state that large numbers frequent the sea around the atolls from April to October. Normally does not enter the lagoons.

Procellaria lherminieri bailloni Bonaparte : Audubon's Shearwater.
(M. = *Hoogula*)

Collected in North Malé Atoll (P. & S.) and in Fadiffolu Atoll (G. S. & L. F.). Observed in small numbers in the Equatorial Channel between Addu and Suadiva Atolls. Breeds December and January and possibly throughout the year.

Procellaria pacifica Gmelin : Wedgetailed Shearwater. (M. = *Bodu-Hoogula*)

Sight record only. Small numbers observed in the Equatorial Channel, between Addu and Suadiva Atolls, in March (25th), May, and June 1958. Reported by the Maldivians to frequent the seas adjacent to the atolls during the period April to October but, normally, does not enter the lagoons.

Procellaria carneipes (Gould) : Pinkfooted Shearwater. (M. = *Ma-Hoogula*)

Sight record only. Several observed in the Equatorial Channel, in March (26th) and July (6th) 1958. Large shearwaters of this type are reported by the Maldivians to frequent the seas adjacent to Addu Atoll but, normally, they do not enter the lagoons. It is probable that some of the birds seen were Whitefronted Shearwaters (*P. leucomelaena* Temminck) which also occur in this area of the Indian Ocean.

Bulweria bulwerii (Jardine & Selby) : Bulwer's Petrel. (M. = *Kurangee?*)

A single female was caught, in an exhausted condition, in Addu Atoll on the evening of 22 August 1958; the first record for the Indian Ocean. The species is not known to the Maldivians.

PHAETHONTIDAE

Phaëthon lepturus lepturus Daudin : Longtailed Tropic-Bird. (M. = *Dandfulu-Doonie*)

Collected in North Malé (P. & S.); in Addu (P.) and in Suadiva and Fadiffolu Atolls (G. S. & L. F.). Plentiful and resident throughout the

Archipelago. Breeds from November to January and probably later in the year.

SULIDAE

Sula leucogaster rogersi Mathews : Brown Booby. (M. = *Ma-Doonie*)

One female collected in Addu Atoll (P.) and a captive, from Fadiffolu Atoll, examined and measured in Malé (P. & S.). Reported by Maldivians to occur in numbers in Suadiva Atoll and observed in North Malé Atoll (P.). Specimens from the Maldives and from the Laccadives, in the British Museum, are very close to specimens from the Solomon Islands and Borneo. They have larger and heavier bills than those from Aden and the Red Sea which have been referred to the nominate race *leucogaster* (Boddaert).

Sula dactylatra Lesson : Masked Booby or Gannet. (M. = *Ma-Doonie*)

Sight record only. Two observed, end of November 1958, in North Malé Atoll (P. & S.); one observed and photographed on 28 November 1962, at Gan (Addu) (J. J. L.). Reported by Maldivians to occur, frequently, in Suadiva Atoll. Status uncertain.

FREGATIDAE

Fregata minor (Gmelin) : Larger Frigate Bird. (M. = *Hora* or *Ma-Hora*)

Sight record only. Small numbers observed over Malé, North Malé Atoll, during December 1956 and January 1957 (P. & S.). Several observed over Addu Atoll during 1958 (P.) and during May and June 1961 (J. J. L.). Appears to be a frequent visitor to the atolls but status uncertain.

Fregata ariel iredalei Mathews : Lesser Frigate Bird. (M. = *Hora* or *Ma-Hora*)

2 females collected from Mahlosmadulu (P. & S.) and 2 from Suadiva Atoll (P.). In Addu Atoll, 36 were observed hanging in the sky over a reef on the morning of 8 June 1958 (P.). Plentiful around most atolls and probably resident in some; but breeding observed only in Mahlosmadulu, during October and November (G. & G.).

ARDEIDAE

Ardea cinerea rectirostris Gould : Grey Heron. (M. = *Markana*)

Collected in North Malé (P. & S.), Addu (P.), Gaha Faro, Ari, and Addu (G. S. & L. F.). Plentiful and resident in all atolls. Breeding

observed during June, July, August, November, December, January, and February.

Ardea purpurea Linnaeus : Purple Heron. (M. = *Markana*)

Male, in sub-adult plumage, collected in Addu Atoll on 3 November, 1958 (P.). Others observed on 14 July, 23rd and 31 October, 5 November, 19 November (2), 29 December, and 18 January (J. J. L.). Status uncertain, probably a frequent visitor. Specimen is probably of the race *manilensis* Meyen but sub-adults are difficult to determine, with certainty.

Butorides striatus didii Phillips & Sims : Central Maldivian Little Heron.
(M. = *Rabonde*)

Collected in North Malé Atoll; plentiful, breeds during December and January (P. & S.). A well-marked, pale race with the crest, crown-patch, and eye-stripe greatly reduced. Meets the darker form, *albidulus* to the south and a considerably darker form, more akin to *javanicus* (Horsfield), to the north. Probably *javanicus* has invaded the Laccadives from India and has spread into the northern atolls of the Maldives where interbreeding with *didii* has occurred. More collecting in the intervening atolls is necessary before the exact range of each race can be worked out.

Butorides striatus albidulus Bangs : Southern Maldivian Little Heron.
(M. = *Rabulli*)

Collected in Addu and observed in Suadiva Atoll (P.). Plentiful in southern atolls but northern limits of range not ascertained. Breeding observed during January, February, September, October, and November. This race is considerably darker than *didii*; the crest, crown-patch, and eye-stripe are well defined but not as dark as in *javanicus*. Comparisons with *albolimbatus* Reichenow, from Diego Garcia in the Chagos Islands have not been made owing to lack of specimens.

Egretta garzetta (Linnaeus) : Little Egret. (M. = *Irruwar-Hudu*)

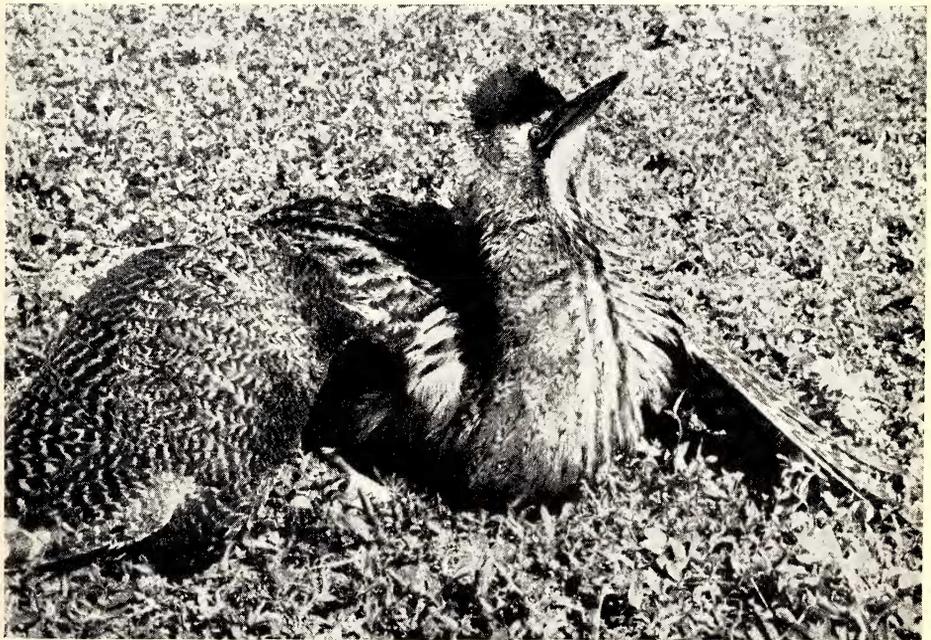
Sight record only. Two in captivity in Addu Atoll and one observed in South Mahlosmadulu Atoll (G. & G.). One observed in Addu Atoll (G. S. & L. F.). Status uncertain; probably an occasional winter visitor.

Egretta alba modesta (J. E. Gray) : Eastern Large Egret. (M. = *Hudu-Markana*)

A male collected on 20 December 1958, on Gan Addu, and



Southern Maldivian Little Heron (*Butorides striatus albidulus*), Gan, Addu Atoll, page 566



Common Bittern (*Botaurus stellaris*), Gan, Addu Atoll, page 567

Photos : A. J. H. Cobon



Whimbrel (*Numenius phaeopus*), Gan, Addu Atoll, page 573



Grey Heron (*Ardea cinerea rectirostris*), Gan, Addu Atoll, page 565

Photos : A. J. H. Cobon

another observed on 31 January 1959 (P.). Maldivians state, it is a frequent winter visitor.

Bubulcus ibis coromandus (Boddaert): Eastern Cattle Egret. (M.=
Irruwar-Hudu)

2 males collected in North Malé Atoll in December 1956 (P. & S.); 4 observed in Addu Atoll on 5 February 1961 were believed to have been bred, locally, in September 1960 (J. J. L.). Stated by Maldivians to be a frequent visitor.

Ardeola grayii grayii (Sykes): Indian Pond Heron. (M.=*Hudu-Rabonde*)

One collected in Fadifollu Atoll (G, S. & L. F.). Status unknown, probably a straggler.

Ardeola grayii phillipsi Scheer: Maldivian Pond Heron. (M.=*Hudu-Rabulli*)

Collected in Addu Atoll, where abundant, and observed in Suadiva Atoll (P., G. S., & L. F.). Appears to be confined, as a resident, to Addu and Suadiva atolls.

Ixobrychus sinensis (Gmelin): Little Yellow Bittern. (M.=*Rabulli*
or *Rabonde*)

Sight record only. One flushed from dense reeds on Medu Island, Addu Atoll, on 8 November 1958 and another a few weeks later (P.). Status unknown.

Ixobrychus cinnamomeus (Gmelin): Chestnut Bittern. (M.=*Ratu Rabonde*)

Male collected in North Malé Atoll in December 1956 (P. & S.). One observed in Addu Atoll on 5 March, 2 on 30 August, and one on 31 October 1961 (J. J. L.). Status uncertain; reported by Maldivians to be an occasional visitor.

Dupetor flavicollis flavicollis (Latham): Black Bittern. (M.=*Karlu Rabonde*)

2 males collected and others observed in North Malé Atoll during December 1956 and January 1957 (P. & S.). 3 together in Addu on 4 June 1958 (P.) and one 10 March 1961 (J. J. L.). Status uncertain, probably occasional visitor.

Botaurus stellaris (Linnaeus): Common Bittern. (M.= ? ?)

One caught and photographed on Gan (Addu) on 25 October, another on 15 November, and a third on 27 December 1961 (J. J. L.). Status uncertain, probably a rare vagrant.

PLATALEIDAE

Plegadis falcinellus (Linnaeus) : Glossy Ibis. (M. = ? ?)

Sight record only. One observed on Gan (Addu) on 10 January 1959 (P.); another on 23 October 1961 (J. J. L.). Status uncertain, probably a rare vagrant.

ANATIDAE

Anas crecca Linnaeus : Common Teal. (M. = *Ratu Rairu*)

Sight record only. Observed in South Mahlosmadulu and Miladumadulu Atolls (G. & G.). Status uncertain; probably an occasional winter visitor to the northern atolls.

Anas querquedula Linnaeus : Garganey. (M. = *Rairu*)

A captive female examined and small flocks up to 25 frequently observed in Addu Atoll from 3 October to 17 January 1959 (P.). Reported by Maldivians to be a regular visitor to Addu Atoll during the northern winter period.

Anas acuta (Linnaeus) : Pintail. (M. = *Rairu*)

Sight record only. Several observed in Addu Atoll during October and December 1958 (P.). Status unknown.

Spatula clypeata Linnaeus : Shoveller. (M. = *Rairu*)

A male, in immature plumage, collected and small parties up to 7 observed in Addu Atoll, from 5 November 1958 to 17 January 1959 (P.). Probably a regular winter visitor, in small numbers.

Aythya fuligula (Linnaeus) : Tufted Duck. (M. = *Rairu*)

2 females examined, in captivity, in North Malé Atoll, during November 1956 (P. & S.). Reported by Maldivians to be a fairly frequent winter visitor to Malé Island reefs.

Aythya nyroca nyroca (Güldenstädt) : Ferruginous Duck. (M. = *Rairu*)

A single female collected on Gan, Addu Atoll, on 5 November, 1958 (P.). Status unknown; probably a vagrant.

Nettapus coromandelianus coromandelianus (Gmelin) : Cotton Teal. (M. = *Rairu*)

A single female collected on Gan, Addu Atoll, on 8 December 1958 (P.). Status unknown; probably a vagrant.

FALCONIDAE

Buteo sp.: Buzzard. (M.=*Bazzu*)

Sight record only. On 14 January 1959, a Buzzard was observed flying over Gan, Addu Atoll; it was being mobbed by 30 or more White Terns (*Gygis alba monte*) and was too far away for identification of the species (P.). Another was observed in Suadiva Atoll (G. S. & L. F.). Status unknown.

Pernis apivorus orientalis Taczanowski: Siberian Honey Buzzard. (M.=*Bazzu*)

A single male collected in Gan, Addu Atoll, on 4 December 1959 (P.). This specimen agrees well with a male in the British Museum from 'the hills south of Samarkand'. Status unknown; probably a vagrant.

Circus aeruginosus (Linnaeus): Marsh Harrier. [M.=*Bazzu* (male); *Ahunda* (female)]

Sight record only. Adult male observed in North Malé Atoll on 26 December 1956 (P. & S.); several on Gan (Addu) during 1961 (J. J. L.). Reported by Maldivians to be an occasional visitor.

Circus macrourus (S. G. Gmelin): Pallid or Pale Harrier. (M.=*Bazzu*)

A first winter female collected on Gan, Addu Atoll, on 11 January, 1959 (P.). One collected on Fadiffolu Atoll (G. S. & L. F.). Status—see under next species.

Circus pygargus (Linnaeus): Montague's Harrier. (M.=*Bazzu*)

Male and female, both in first winter plumage, collected on Gan, Addu Atoll, on 6 December 1958 and 13 January 1959, respectively. Small numbers of harriers (*C. macrourus* and *C. pygargus*) all in female or immature plumage, recorded on Gan from 12 November 1958 to 14 March 1959 (P.) and again in 1961 (J. J. L.). Gardiner recorded both this and the last species as very common 'from October to February in the northern parts of the Maldives'. Both species are regular winter visitors; the majority are in first winter plumage.

Pandion haliaetus (Linnaeus): Osprey. (M.=*Bazzu*)

Sight record only. One observed fishing off the southern coast of Gan (Addu), in July 1960 (J. J. L.). Probably a vagrant.

Falco peregrinus Tunstall : Peregrine Falcon. (M = *Bazzu*)

Sight record only. A large, dark falcon, which appeared to be an immature female, observed on Gan (Addu) on 14 October 1958 (P.); others observed on 12th and 18 December 1961 (J. J. L.). Appears to be an infrequent visitor.

Falco vespertinus amurensis Radde : Eastern Redlegged Falcon.

(M. = *Sirumuthi*)

Male and female collected on Gan (Addu) on 5th and 14 December 1958, respectively (P.); others seen on 26 November and 12th to 14 December 1961 (J. J. L.). Feeds upon large grasshoppers and locusts, chiefly upon *Catantops pinguis innotabilis* (P.). Appears to be a winter visitor, in small numbers.

Falco naumanni naumanni Fleischer : Lesser Kestrel. (M. = *Sirumuthi*)

First year male and a female collected on Gan (Addu) on 12th and 15 December 1958; several others observed from 12 November to 21 December (P.); others observed from 8 October to 26 November 1961 (J. J. L.). Feeds chiefly upon large grasshoppers (*C. p. innotabilis*) and small *Calotes* lizards (P.). Probably an annual winter visitor.

Falco tinnunculus tinnunculus Linnaeus : European Kestrel.

(M. = *Sirumuthi*)

Female collected in North Malé Atoll in February 1957 (P. & S.); others collected in Ari Atoll, Radu Atoll, and Gaha Faro (G. S. & L. F.). Observed on Gan (Addu) from 22 October to 18 December 1961 (J. J. L.). An annual winter visitor in moderate numbers.

RALLIDAE

Amaurornis phoenicurus phoenicurus (Pennant) : Ceylon Swamp-Hen or Whitebreasted Waterhen. (M. = *Cumbilli*)

Collected in Addu Atoll (P.); in Ari, Rasdu; Gaha Faro, Miladamadulu and Fadiffolu Atolls (G. S. & L. F.). Resident in all atolls, both to the north as well as to the south of Malé Atoll. Breeds in Addu, May to September and frequently later (P.). This race appears to inhabit the whole of the Maldives with the exception of the Malé Atolls where the next race is resident. Specimens from Addu show a marked tendency towards enlargement of the white areas and frequently have odd white feathers, but most of them are so similar to typical *phoenicurus* from Ceylon that I am unable to separate them.

Amauornis phoenicurus maldivus Phillips & Sims : Maldivian Swamp-Hen or Whitebreasted Waterhen. (M.=*Cumbilli*)

Collected in North Malé Atoll, in 1957, where it is resident (P. & S.). Breeds from May or June to August and September. This race appears to be confined to North and South Malé Atolls and to their vicinity.

Gallixrex cinerea (Gmelin) : Watercock. (M.=*Coolie-Kukulu*)

A single female was collected in North Malé Atoll (P. & S.); one seen in Addu Atoll (G. S. & L. F.). Reported by Maldivians to be resident in the more northerly atolls.

CHARADRIIDAE

Chettusia gregaria (Pallas) : Sociable Plover. (M. = ? ?)

The Sociable Plover was reported to visit the Maldives (P. & S.) but it is now considered probable that the informant confused it with the Pratincole, *Glareola pratincola* (see below). It should, therefore, be deleted from the list of Maldivian Birds, pending confirmation.

Charadrius hiaticula tundrae (Lowe) : Arctic Ringed Plover. (M.=*Findon*)

A single male collected in North Malé Atoll in December 1956 (P. & S.). 2 females collected in Gan (Addu) and several others observed from 17 November 1958 to 24 February 1959 (P.) and on 16 to 29 December 1961 (J. J. L.) The majority were in first-year plumage (P.). Appears to be an annual winter visitor, in small numbers.

Charadrius dubius jerdoni (Legge) : Little Ringed Plover. (M.=*Findon*)

One collected and several others observed in parties of 2 or 3 in Gan (Addu) from 10 November 1958 to 12 February 1959 (P.) and from 24th to 26 November 1961 (J. J. L.). Appears to be an annual winter visitor, in small numbers.

Charadrius alexandrinus Linnaeus : Kentish Plover. (M.=*Findon*)

Sight record only. Several observed on 18th and 19 November 1958 and again on 24 February 1959 on Gan (Addu) (P.). Status uncertain.

Charadrius mongolus atrifrons Wagler : Lesser Sand Plover. (M.=*Findon*)

3 collected and many observed, in small flocks, on Gan (Addu) from 24 August 1958 to 6 March 1959 (P.). One collected in North

Malé Atoll in December 1956 (P. & S.) and one in Fadiffolu Atoll (G. S. & L. F.). Appears to be a regular winter visitor, in considerable numbers.

Charadrius leschenaultii Lesson : Large Sand Plover. (M. = *Bondun*)

One collected and many observed, generally singly, on Gan (Addu), from September 1958 to March 1959; a few non-breeding birds were seen in May, June, and August (P.), and also in 1961 (J. J. L.). One collected in North Malé Atoll in December 1956 (P. & S.). A regular winter visitor, in small numbers.

Charadrius asiaticus asiaticus Pallas : Caspian Plover. (M. = *Bondun*)

A male and female collected, together, on Gan (Addu) on 10 November 1958 (P.). Status uncertain.

Pluvialis squatarola (Linnaeus) : Grey Plover. (M. = *Alaka*)

Collected in North Malé Atoll, where plentiful in winter (P. & S.). Very plentiful in Gan (Addu) from August to March but small numbers of non-breeding birds loiter throughout the year (P.). A regular winter visitor, in moderate numbers.

Pluvialis dominica fulva Gmelin : Asiatic Golden Plover. (M. = *Durrceen*)

Several collected and many observed, in flocks to about 50, on Gan (Addu) from 5 October 1958 to 21 March 1959 (P.) and from 29 December 1960 to 3 May 1961 (J. J. L.). Observed in North Malé Atoll (P. & S.), in Malé, Miladumadulu and Minicoy Atolls (G. & G.). A regular winter visitor, in considerable numbers.

Arenaria interpres interpres (Linnaeus) : Turnstone. (M. = *Ratafy*)

Very plentiful in Addu Atoll; flocks of 60+ arrive in late June and remain until the following March and April. Small numbers of non-breeding birds remain throughout the year (P.). Plentiful also in North Malé Atoll (P. & S.). Collected in Addu, Ari and Fadiffolu Atolls (G. S. & L. F.). The commonest of all the wintering waders; flocks of 150/200 in Gan (Addu) on 16 April and 13 September 1961 (J. J. L.).

SCOLOPACIDAE

Capella stenura (Bonaparte) : Pintail Snipe. (M. = *Durrceen Elolly*)

2 females collected and many more observed in Addu Atoll, from 4 October 1958 to 13 February 1959 (P.). Collected in North Malé

Atoll in December, 1956 (P. & S.). Appears to be a regular winter visitor, in moderate numbers.

Capella megala (Swinhoe) : Swinhoe's Snipe. (M. = *Durceen Elolly*)

A single male collected in Medu Island, Addu Atoll, on 8 December 1958 (P.).

Capella gallinago gallinago (Linnaeus) : Common Snipe. (M = *Durceen Elolly*)

2 males and 2 females collected and several more observed in Addu Atoll from 15 December 1958 to end of January 1959 (P.). Reported to be 'extremely numerous in April 1900 on the mud-flats of Addu Atoll at low tide' by Gardiner who thought that it must breed in Addu Atoll but this is most unlikely. Appears to be a regular winter visitor.

Numenius arquata orientalis C. L. Brehm : Eastern Curlew. (M. = *Bodu Bulithumbi*)

A female collected on Gan (Addu) on 6 December 1958 and several more observed during December, and one on 9 March 1959 (P.); one on 22 March, 2 on 16 April, and others from May to November 1961 (J. J. L.). One observed in North Malé Atoll on 6 February 1957 (P. & S.). A regular winter visitor, in small numbers.

Numenius phaeopus phaeopus (Linnaeus) : Whimbrel. [M. = *Bulithumbi* or (in Addu) *Bulithunga* or *Orana*]

Collected and observed in Addu Atoll where it is very plentiful, especially during the northern winter. A regular winter visitor, in large numbers; many non-breeding birds loiter throughout the year.

Limosa lapponica lapponica (Linnaeus) : Bartailed Godwit. (M. = *Bulithumbi Elolly*)

A single bird observed, frequently, in Addu Atoll, from 6 June 1958 to 31 January 1959 (P.). A male collected in North Malé Atoll December 1956 (P. & S.). Appears to be a frequent visitor, chiefly during the winter.

Tringa glareola Linnaeus : Wood Sandpiper. (M. = *Findon Elolly*)

3 collected and several observed on Gan (Addu) between 12 August 1958 and 13 January 1959 (P.), 6 on Gan on 18 February 1961 (J. J. L.). Others observed in North Malé Atoll, December 1956 and January 1957 (P. & S.). Appears to be a regular winter visitor.

Tringa hypoleucos Linnaeus : Common Sandpiper. (M.=*Findon*)

Many observed in Addu Atoll from 10 August 1958 to 22 March 1959. A regular winter visitor, in moderate numbers, from August to April, to all Atolls.

Tringa totanus eurhinus (Oberholser) : Eastern Redshank. (M.=*Ratafy Elolly*)

A male collected and small numbers observed in Addu Atoll between 20 November 1958 and 6 March 1959 (P.) and others observed in 1961 (J. J. L.). Collected and observed in North Malé Atoll in December 1956 (P. & S.). A regular winter visitor in small numbers.

Tringa nebularia (Gunnerus) : Greenshank. (M.=*Chunchun Elolly*)

Many small parties observed in Addu Atoll, from early November 1958 to early March 1959 (P.) and again from the 16 June 1961 to the 20 January 1962 (J. J. L.). Collected and observed in North Malé Atoll during December 1956 and January 1959 (P. & S.). Collected in Addu and Miladumadulu Atolls (G. S. & L. F.). A regular winter visitor, in moderate numbers; some non-breeding birds loiter.

Xenus cinerea (Latham) : Terek Sandpiper. (M.=*Findon*)

A male collected on Gan (Addu) on 21 November and another observed on the 7 December 1958 (P.). A winter visitor; status uncertain.

Calidris minutus (Leisler) : Little Stint. (M=*Kirru Bondun*)

2 males collected and several observed on Gan (Addu) between 11 November 1958 and 31 January 1959 (P.) and between 13 November and 16 December 1961 (J. J. L.). A single male collected and one other observed in North Malé Atoll during December 1956 (P. & S.). A regular winter visitor, in small numbers.

Calidris temminckii (Leisler) : Temminck's Stint. (M.=*Kirru Bondun*)

Sight record only. One observed closely on Gan (Addu) from 23 to 26 May 1958 and others from 5 October to 11 November (P.). Status uncertain.

Calidris subminutus (Middendorff) : Longtoed Stint. (M.=*Kirru Bondun*)

4 collected and small numbers observed, frequently, on Gan (Addu) between 17 November 1958 and 24 February 1959 (P.) and also on the 26th and 27 October 1961 (J. J. L.). Appears to be a winter visitor, in small numbers, to Addu Atoll.

Calidris alpinus alpinus (Linnaeus) : Dunlin. (M.=*Kirru Bondun* or *Findon*)

3 collected and others observed on Gan (Addu) between 25 November 1958 and 24 February 1959 (P.). Probably a regular winter visitor, in small numbers.

Calidris testaceus (Pallas) : Curlew-Sandpiper. (M.=*Findon*)

3 collected and large numbers, in flocks up to 100, observed in Addu Atoll from 25 June 1958 to middle March 1959 (P.) and also in 1961 (J. J. L.). Large numbers visit the Maldives in winter and small numbers, of non-breeding birds, loiter throughout the year.

Calidris albus (Pallas) : Sanderling. (M.=*Kirru Bondun*)

A single male collected and several others observed on Gan (Addu) between 15 November 1958 and 4 January 1959 (P.) and another 6 in March 1961 (J. J. L.). Status uncertain; a winter visitor.

Philomachus pugnax (Linnaeus) : Ruff. (M.=*Findon*)

A single sub-adult male visited Gan (Addu) from 3rd to 17 October 1958 and another, also in sub-adult plumage, was collected on 5 November (P.). Appears to be an occasional winter visitor.

RECURVIROSTRIDAE

Himantopus himantopus (Linnaeus) : Blackwinged Stilt. (M= ? ?)

Sight record only; one on the southern reef of Gan (Addu) on 5 November 1961 (J. J. L.). Status unknown, probably a vagrant.

GLAREOLIDAE

Glareola pratincola (Linnaeus) : Large Pratincole. (M.=*Abularge*)

A party of 3, in sub-adult plumage, visited Gan (Addu) from 4th to 7 October 1958 and another was observed on 5 November (P.). A broken egg was found on the Air-field on 14 December 1960, a pair was in the area from 14 December 1960 to 16 March 1961 and many were observed, in flocks to 25+, from 18 October 1961 to 27 January 1962 (J. J. L.). Probably a resident, moving from atoll to atoll. The race *maldivarum* was named by J. R. Forrester, in 1795, from the description given previously by Latham (1785) of a bird taken at sea in about the same latitude as the Maldives; the Addu Atoll pratincoles were probably of the same race.

DROMADIDAE

Dromas ardeola Paykull : Crab Plover. [M.=*Eshunga* (Addu) or *Tayrawa* (Malé), *Moola Lumbo* (Juvenile)]

2 observed in Addu Atoll on 8 June 1958 (P.). Male collected and others, including juveniles, observed in North Malé Atoll in December 1956 and January 1957 (P. & S.). Collected in Addu, Suadiva, and Rasdu Atolls (G. S. & L. F.). Appears widespread and resident in small numbers.

STERCORARIIDAE

Stercorarius skua Brünnich : Great Skua. (M=*Bodu Hoogula*)

Sight record only. One observed, at close range, in Addu Atoll (J. J. L.). Almost certainly an Antarctic Skua as these skuas are well known as occasional visitors to the north Indian Ocean.

LARIDAE

Larus ridibundus Linnaeus : Blackheaded Gull. (M.= ? ?)

Sight record only. One visited Gan (Addu) from the 10 to 23 December 1961 (J. J. L.). An unusual wanderer.

Chlidonias leucoptera (Temminck) : Whitewinged Black Tern. (M.=*Kirru Dooni*)

Solitary, sub-adult male collected in Addu Atoll on 8 November 1958 (P.) and 3 observed, feeding over flooded areas, on 10 to 16 December 1961 (J. J. L.). Probably an infrequent winter visitor.

Gelochelidon nilotica nilotica (Gmelin) : Gullbilled Tern. (M.=*Kirru Dooni Amma*)

Female collected and others observed in North Malé Atoll during December 1956 and January 1957 (P. & S.); one observed off Addu Atoll on 29 March, another from 13 to 15 September 1961, and one from 21st to 25 January 1962 (J. J. L.). Appears to be resident in small numbers but status is uncertain.

Hydroprogne caspia (Pallas) : Caspian Tern. (M.= ? ?)

Sight record only. 3 observed (separately) in North Malé Atoll on 30 November 1956 (P.); one in Addu Atoll on 18 April, 4 on the 22 September, and 4 on the 18 October 1961 (J. J. L.). Status uncertain; probably an occasional visitor.

Sterna hirundo tibetana Saunders : Tibetan Tern. (M.=*Kirru Dooni*)

2 females, in worn, sub-adult plumage, collected in Addu Atoll lagoon in January and February 1959 (P.). Status unknown; probably an occasional winter visitor.

Sterna dougallii korustes (Hume) : Eastern Roseate Tern. (M.=*Kirru Dooni*)

4 collected and others observed in North Malé Atoll during January 1957 (P. & S.). Status unknown; reported by Maldivians to breed during March/May with other terns.

Sterna sumatrana mathewsi Stresemann : Blacknaped Tern. (M.=*Kirru Dooni*)

Pair collected and large numbers observed in Addu Atoll (P.). Several collected and many observed in North Malé Atoll (P. & S.). Collected and observed by various observers in Ari, Rasdu, Gaha Faro, Fadiffolu, and Miladumadulu Atolls. The most abundant and widespread tern in the Maldives; breeds in Addu Atoll during June and July.

Sterna fuscata Linnaeus : Sooty Tern. (M.=*Walla* or *Walli*)

One collected in Addu Atoll (G. S. & L. F.). Large flocks observed between Ceylon and North Malé Atoll in late November 1956 (P. & S.). Reported by Maldivians to breed during March and April. Status uncertain; occurs in the vicinity of the Maldives at various times during the year.

Sterna anaethetus Scopoli : Bridled or Brownwinged Tern. (M.=*Walla* or *Walli*)

Sight record only. One observed over the southern reef of Gan (Addu) on 15 February, 1959 (P.). Large flocks observed at sea between Ceylon and North Malé Atoll in late November 1956 (P. & S.). Status uncertain; reported by Maldivians to breed in certain atolls during March and April.

Sterna albifrons praetermissa Baker : Mesopotamian Little Tern. (M.=*Bondu* or *Bondu Dooni*)

A single male collected in Addu Atoll on 15 November 1958 (P.). Status uncertain.

Sterna albifrons saundersi Hume : Blackshafted Little Tern. (M.=*Bondu* or *Bondu Dooni*)

3 collected and very large numbers observed throughout the year in Addu Atoll (P.). 3 collected and many others observed in North

Malé Atoll (P. & S.). Resident in considerable numbers throughout the Maldives; reported by Maldivians to breed, with other terns, during April.

Thalasseus bergii velox (Cretzschmar): Large Crested Tern. (M.= *Gardooni*)

Collected and observed in small numbers in North Malé Atoll (P. & S.). Observed by various observers in Addu, Ari, Gaha Faro, and Fadiffolu Atolls. Appears to be resident and widespread, in small numbers; breeding reported by Maldivians in North Malé Atoll during April.

Thalasseus bengalensis bengalensis (Lesson): Indian Lesser Crested Tern. (M.= *Iam Mutie Gardooni*)

3 collected and many observed in Addu Atoll (P.). Collected and observed in small numbers in North Malé, Ari, and Rasdu Atolls by various observers. Appears to be resident, in moderate numbers; reported by Maldivians to breed, with other terns, in North Malé Atoll during April.

Anoëus stolidus pileatus (Scopoli): Common Noddy. (M.= *Maranga*)

Several collected and many observed, in Addu Atoll, throughout the year (P.); others collected, by various collectors, in Suadiva, Gaha Faro and North Malé Atolls. Breeding (one nest) observed in Addu Atoll in April (P.). Appears to be resident in large numbers but, as Maldivians have no knowledge of its breeding, may be only a visitor rarely staying to breed.

Anoëus tenuirostris (Temminck): White-capped Noddy. (M.= *Maranga*)

Gadow & Gardiner reported this species breeding in South Mahlosmadulu Atoll in November 1899 but its presence has not been recorded since. Status unknown.

Gygis alba monte Mathews: White Tern or Fairy Tern. (M.= *Cundu Wallu Dooni*)

Collected and observed, in large numbers, in Addu Atoll to which atoll it is confined (P.). Breeds throughout the year.

PSITTACIDAE

Psittacula calthorpae (Blyth): Emeraldcollared Parakeet. (M.= ?)

Gardiner reported seeing a pair, twice, in January 1899, on Hulule Island, North Malé Atoll. His description of 'green parakeets, a little



Lesser Frigate Bird (*Fregata ariel iredalei*), Gan, Addu Atoll, page 565



White Tern (*Gygis alba monte*) juvenile, Gan, Addu Atoll, page 578

